

# Diploma in Video

## – Part 1

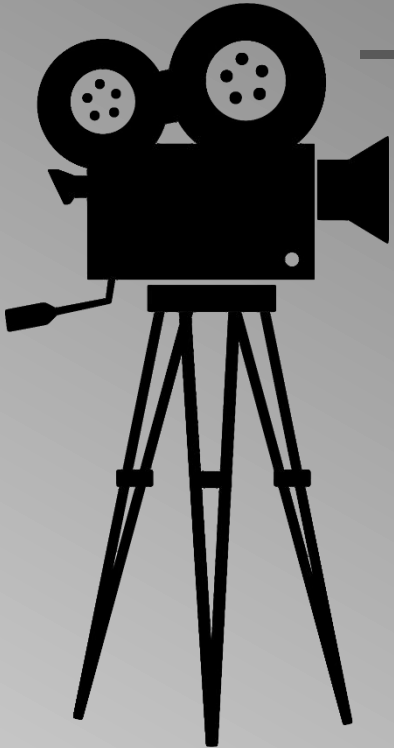
### Lesson 2

## How Video Works

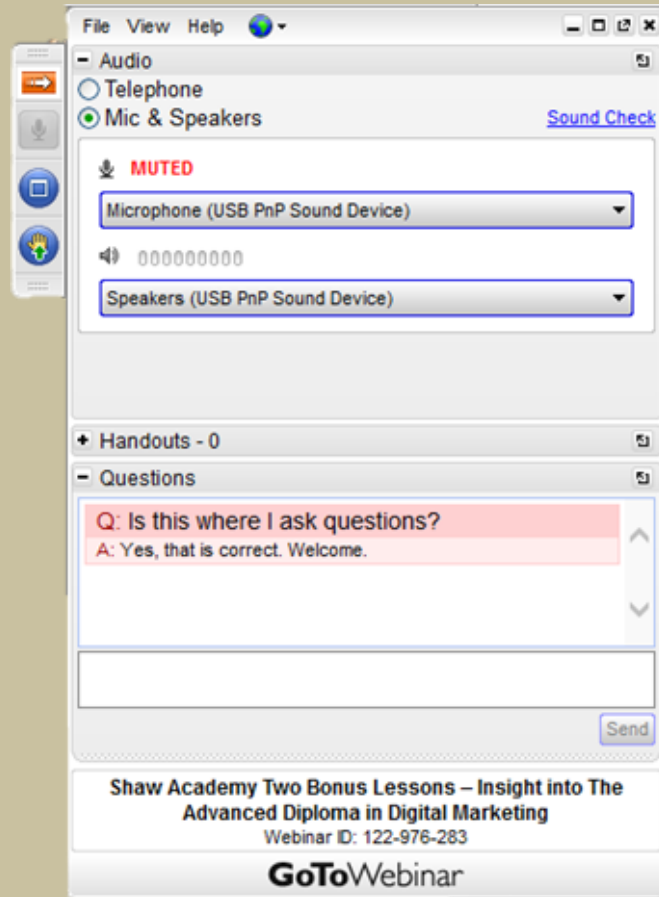
Presented by:

**Adam O'Reilly** Course Educator

F.E.T.A.C in Digital Media Production



# Webinar Interaction



- Chat box – Type responses to the Educator
- We will have a Q&A at the end of the lesson where you can ask questions



# Lesson 2 – How Video Works

- What are Frame Rates?
- What is resolution and what one should I use?
- What is Shutter speed?
  
- Q & A

AGENDA







## Why learn about these things?

- To shoot in the correct format
- To use these technical aspects creatively
- To make sure we produce high quality footage every time.



# VIDEO COURSE TOOL KIT

## INCLUDED:

-  Exclusive Starter Pack
-  Webinar Slides for every lesson
-  Summary Notes for every lesson
-  Bonus Videos

**ONLY**  
**€19.99**

Enhance your learning experience!

# Course Competition

## Win a Shaw Academy Lifetime Membership

The image displays a grid of course icons for Shaw Academy. The grid is organized into three rows. The top row contains six icons: Advanced Nutrition, Ultimate Photography, Advanced Marketing, Advanced Social Media, Advanced Investment, and Advanced Photoshop. The middle row contains six icons: Advanced Graphic Design, Advanced Web Development, Advanced Mobile App Development, Advanced Weight Loss, Advanced Sports & Exercise Nutrition, and Advanced Web Design. The bottom row contains ten icons: Financial Trading, Digital Marketing, Photography, Nutrition, Social Media, Graphic Design, Web Development, Mobile App Development, Photoshop, and Lightroom. The second row of the bottom section contains ten icons: Blogging & Content Marketing, Wedding Photography, Sports Nutrition, Diet & Weight loss, Web Design, Investment, Career Advancement, Coding for Kids, Music, and Beauty. The third row of the bottom section contains ten icons: Psychology of Sales, Fast Track Business Success, Household Budgeting, Microsoft Excel, Health and Fitness, Child Nutrition, Cookery, Languages, Interior design, and Fashion Design. A central banner reads "Shaw Academy Lifetime Membership". Several icons in the bottom row have a "coming soon" diagonal banner.

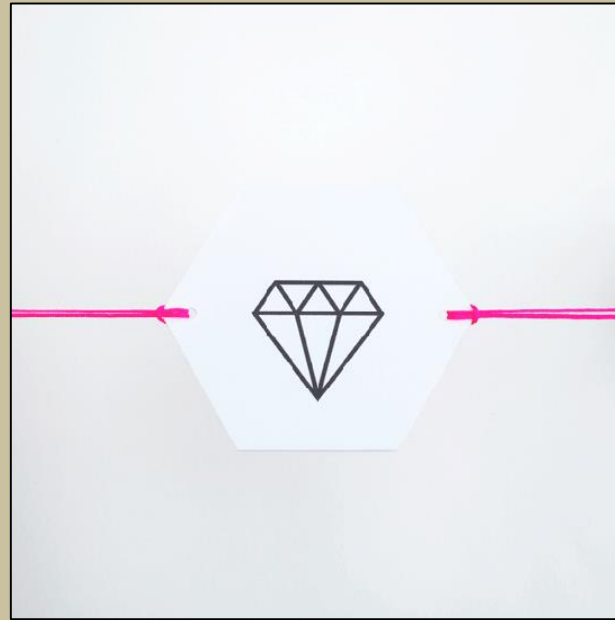
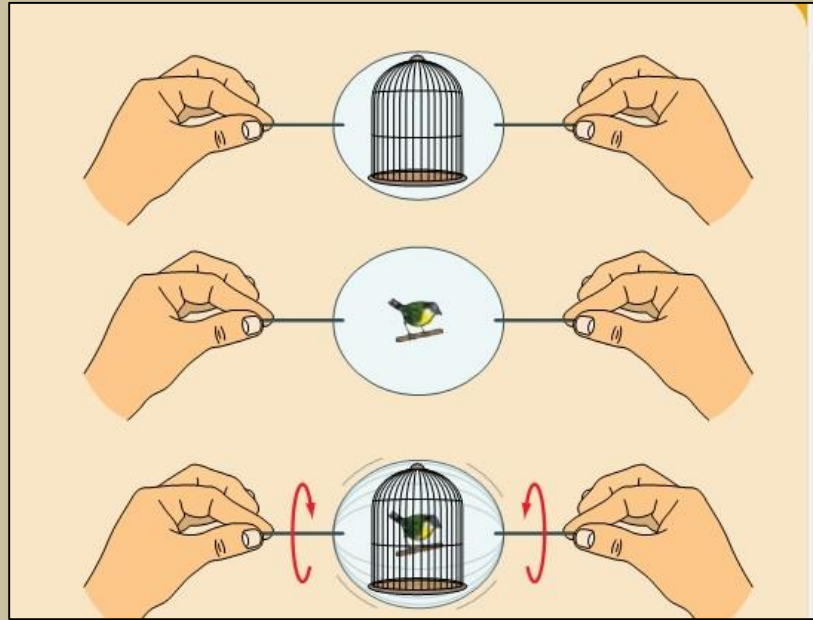
**Shaw Academy Lifetime Membership**

Winner will be announced Live during lesson 6

# What are Frame Rates?

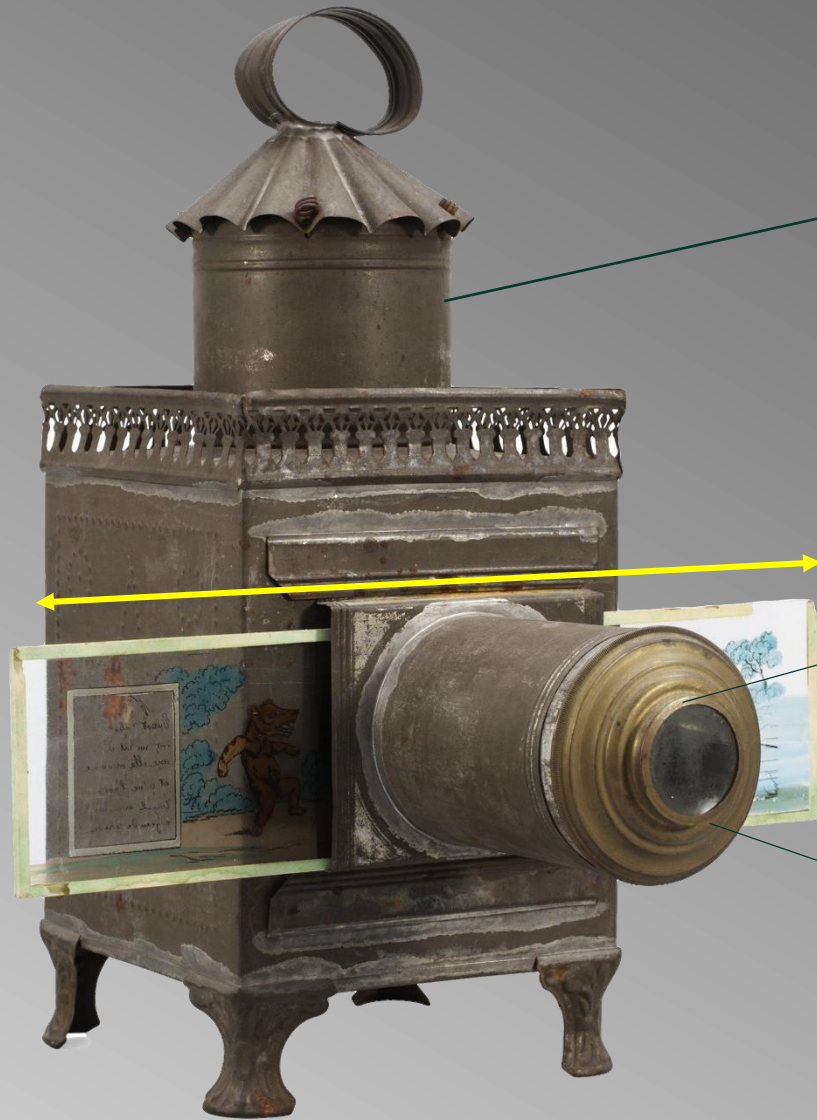


# What are Frame Rates?



The Persistence of vision

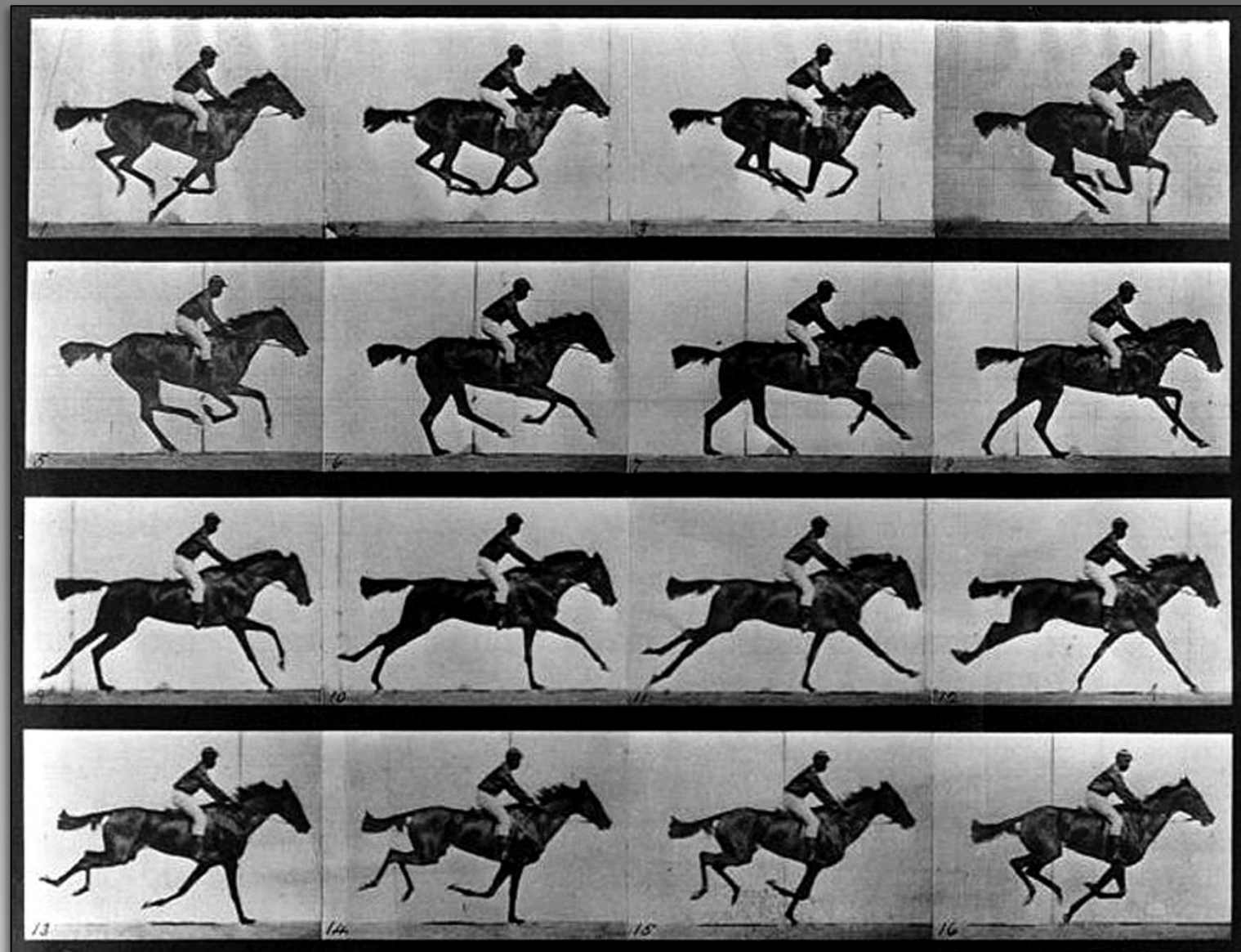
# What are Frame Rates?



Light source



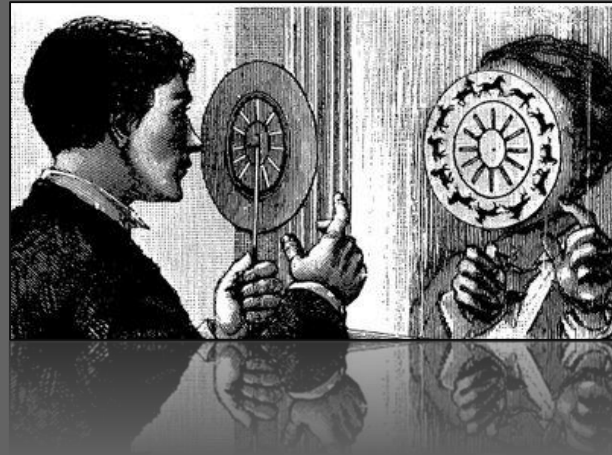
# What are Frame Rates?



# What are Frame Rates?



# What are Frame Rates



# What are Frame Rates?



# What are Frame Rates?



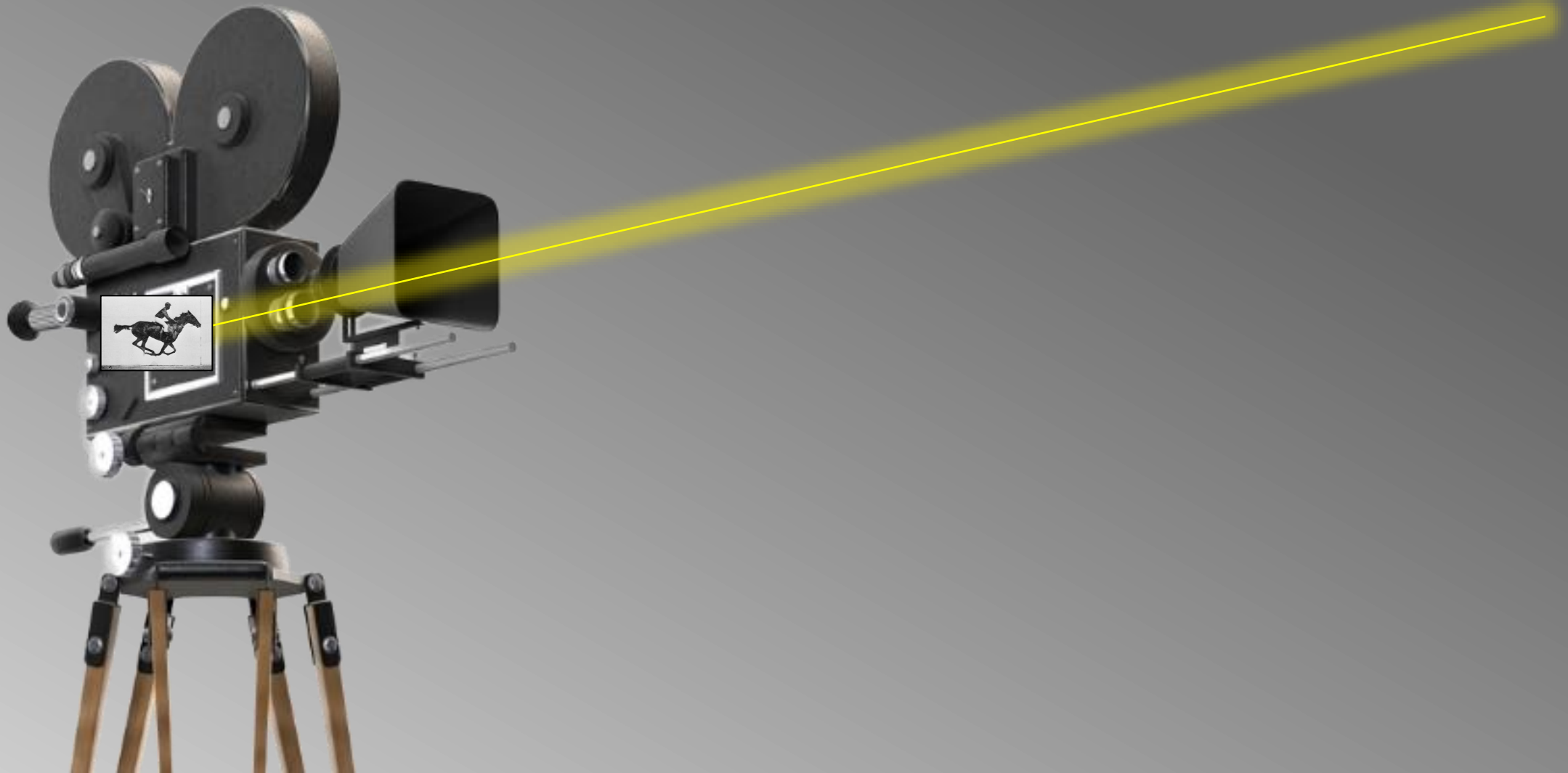
# Motion picture cameras



# The birth of 24 frames per second



# How it works

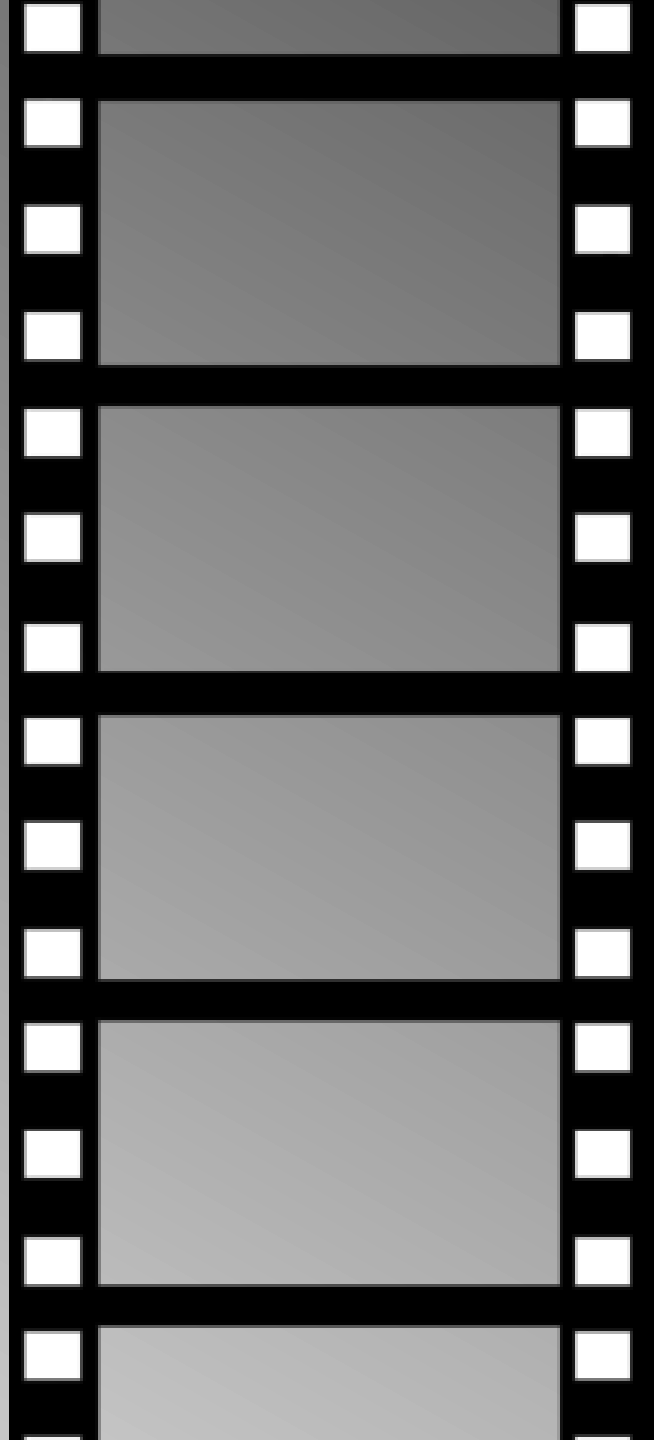


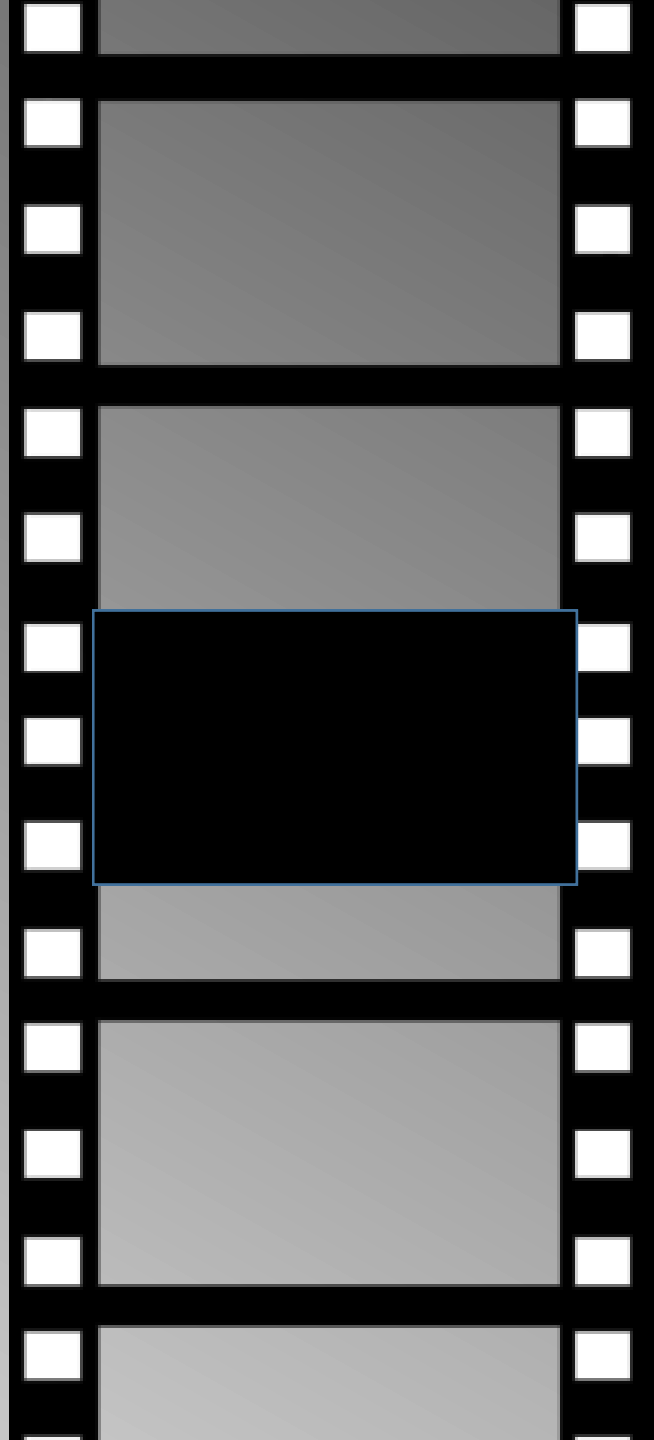
Why 24 frames a second?

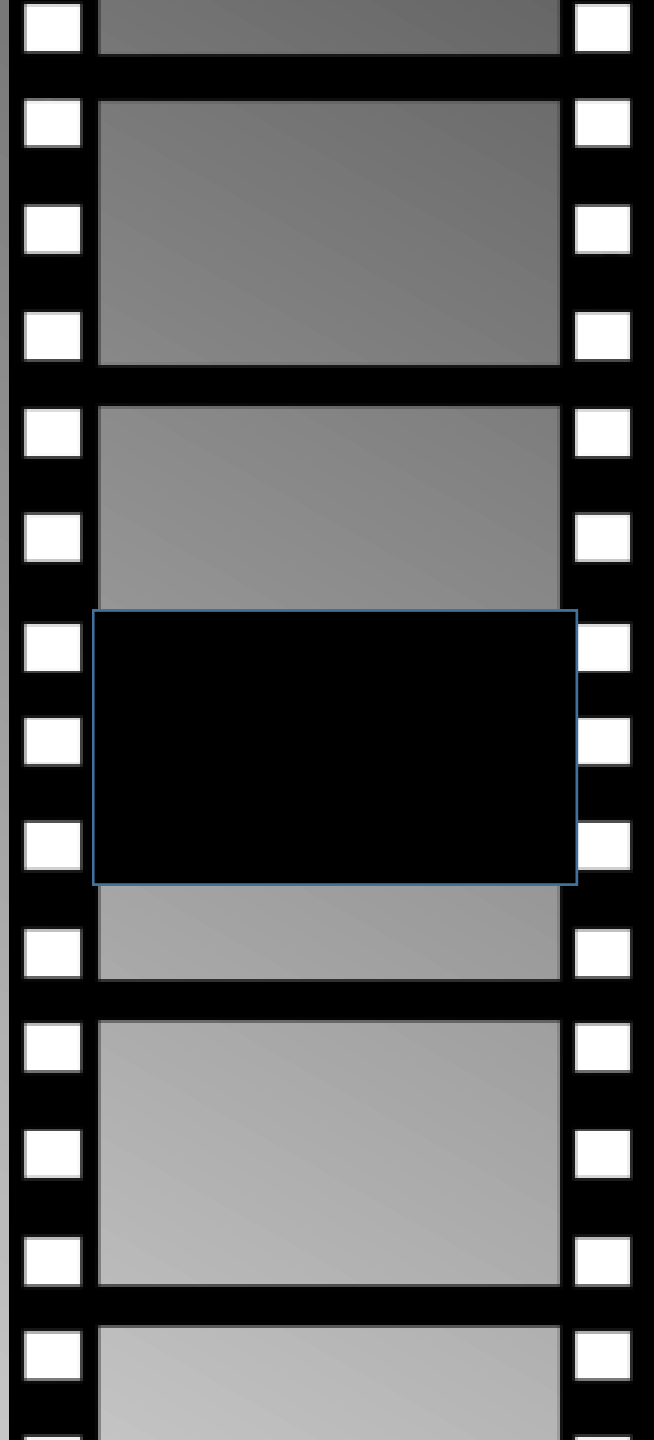


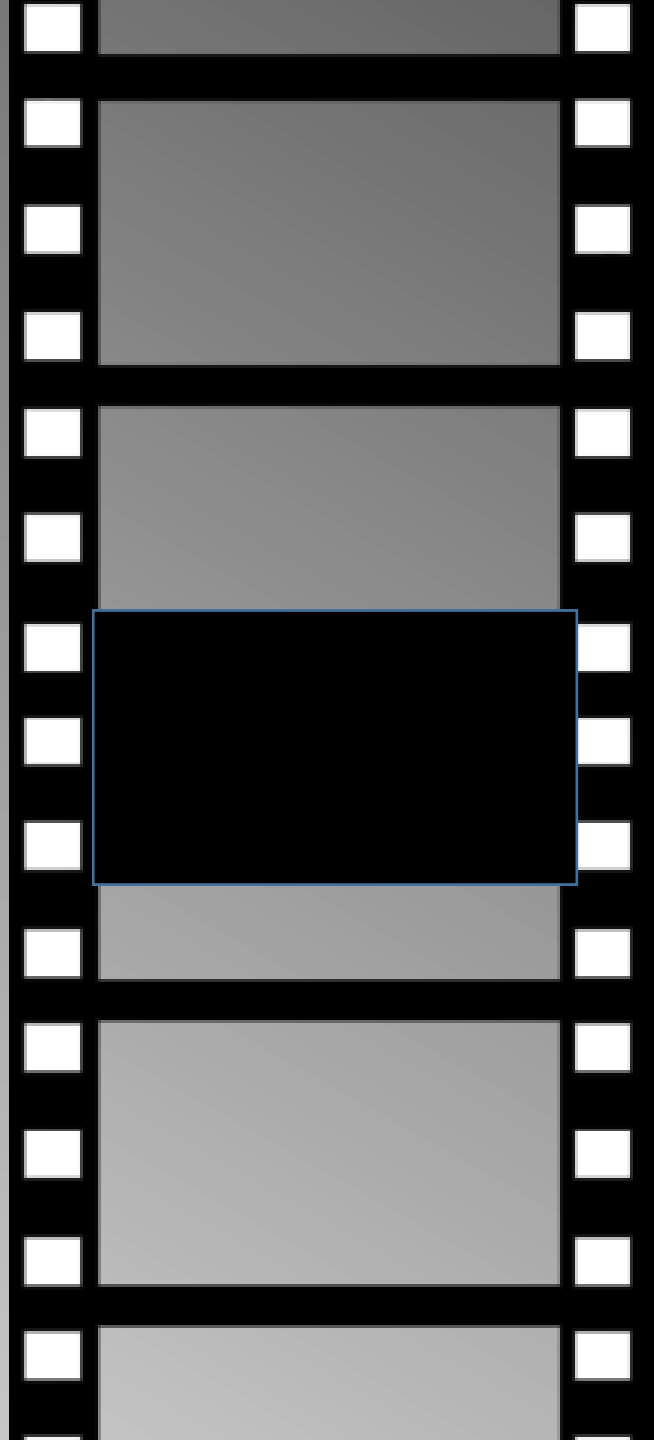
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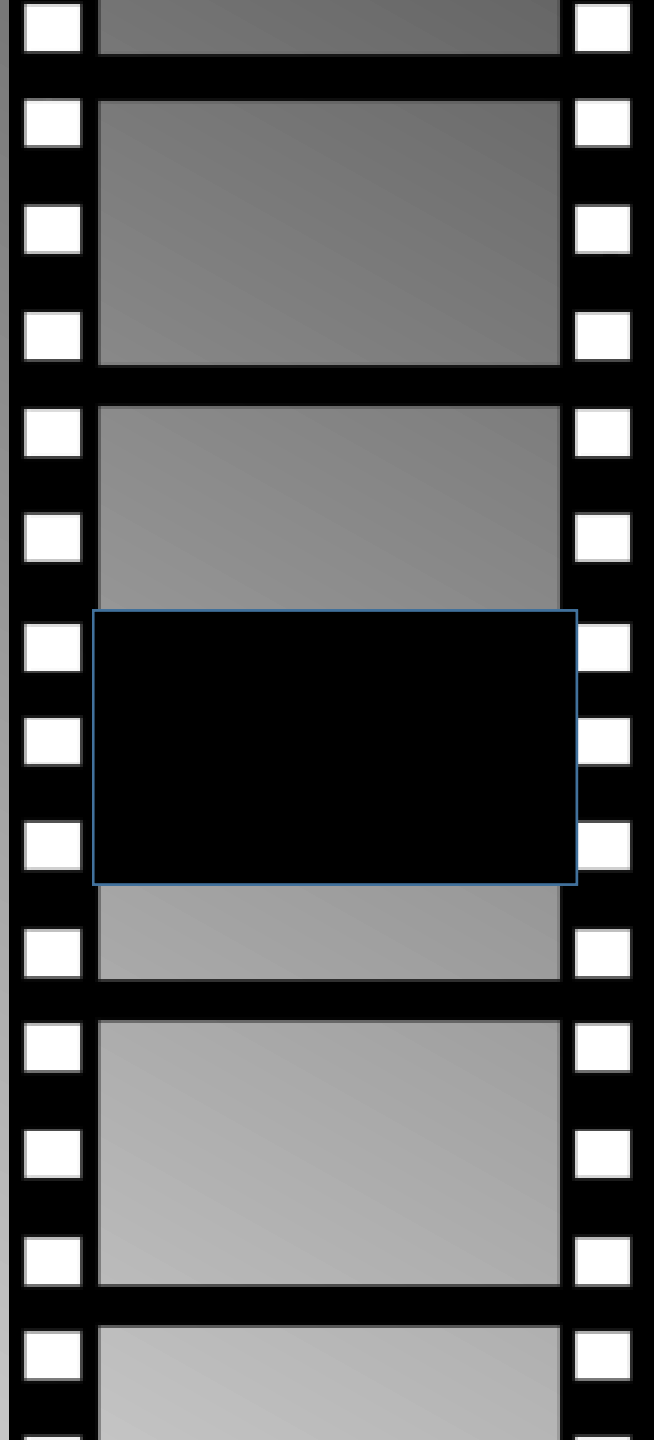


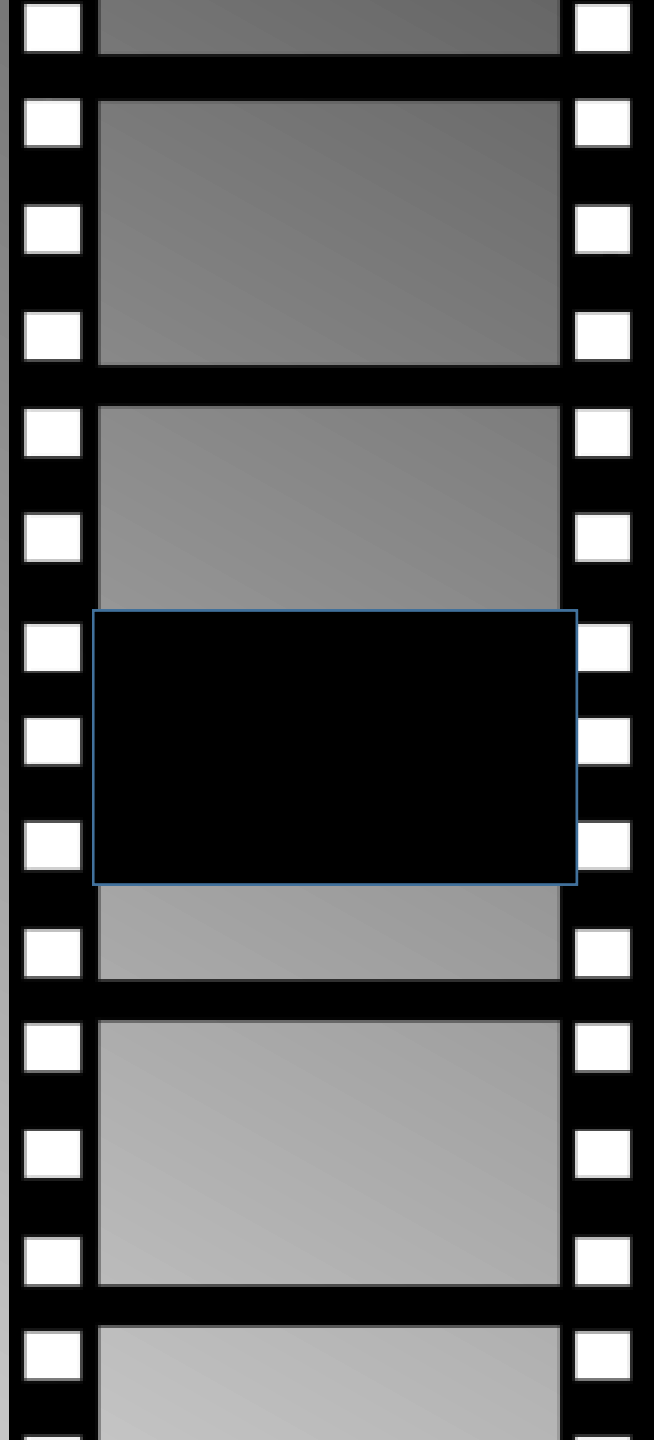




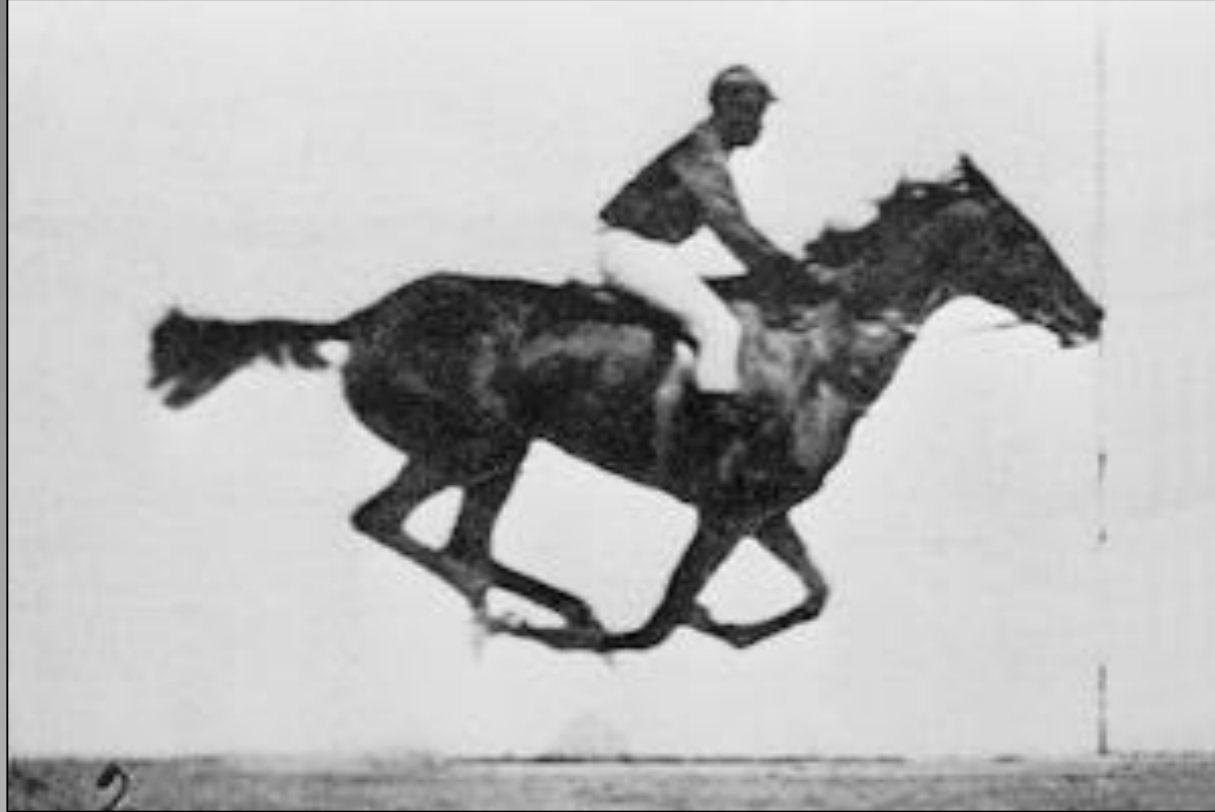






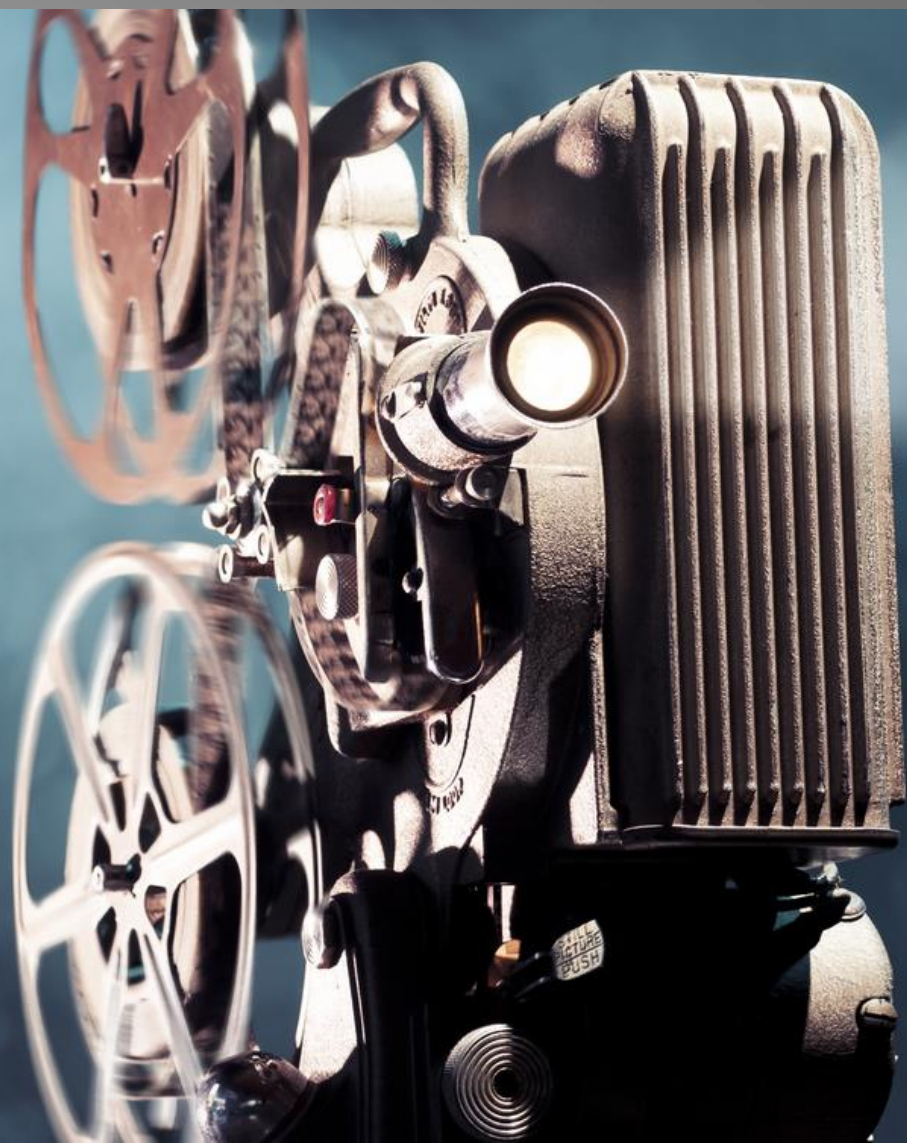


# What are Frame Rates?



Frames per second = how many frames are captured in 1 second

# Projectors



# Common Frame Rates



24 FPS – Movies/Broadcast TV (NTSC)

25 FPS – Broadcast TV (PAL)

30 FPS – TV (New standard)

48 FPS – Fluid movement, little Blur

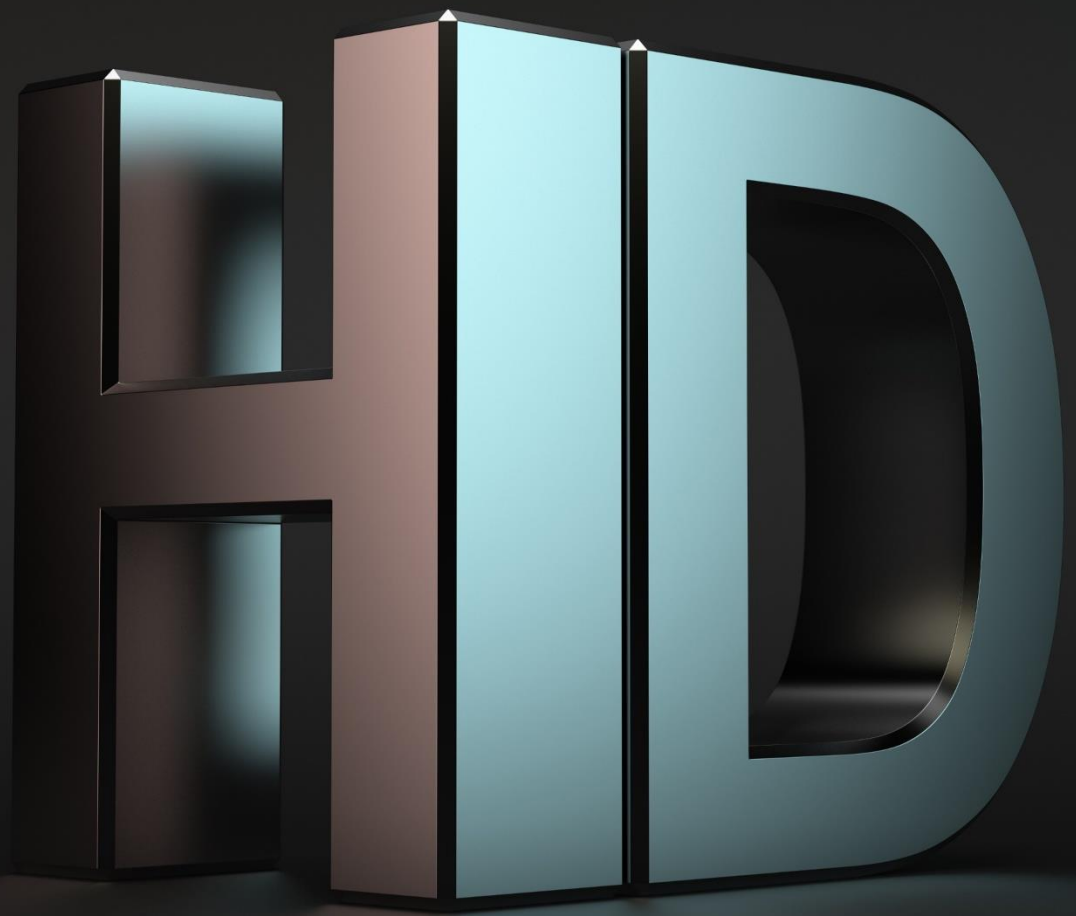
60 FPS+ – Very Fluid, used for slow motion

50 FPS

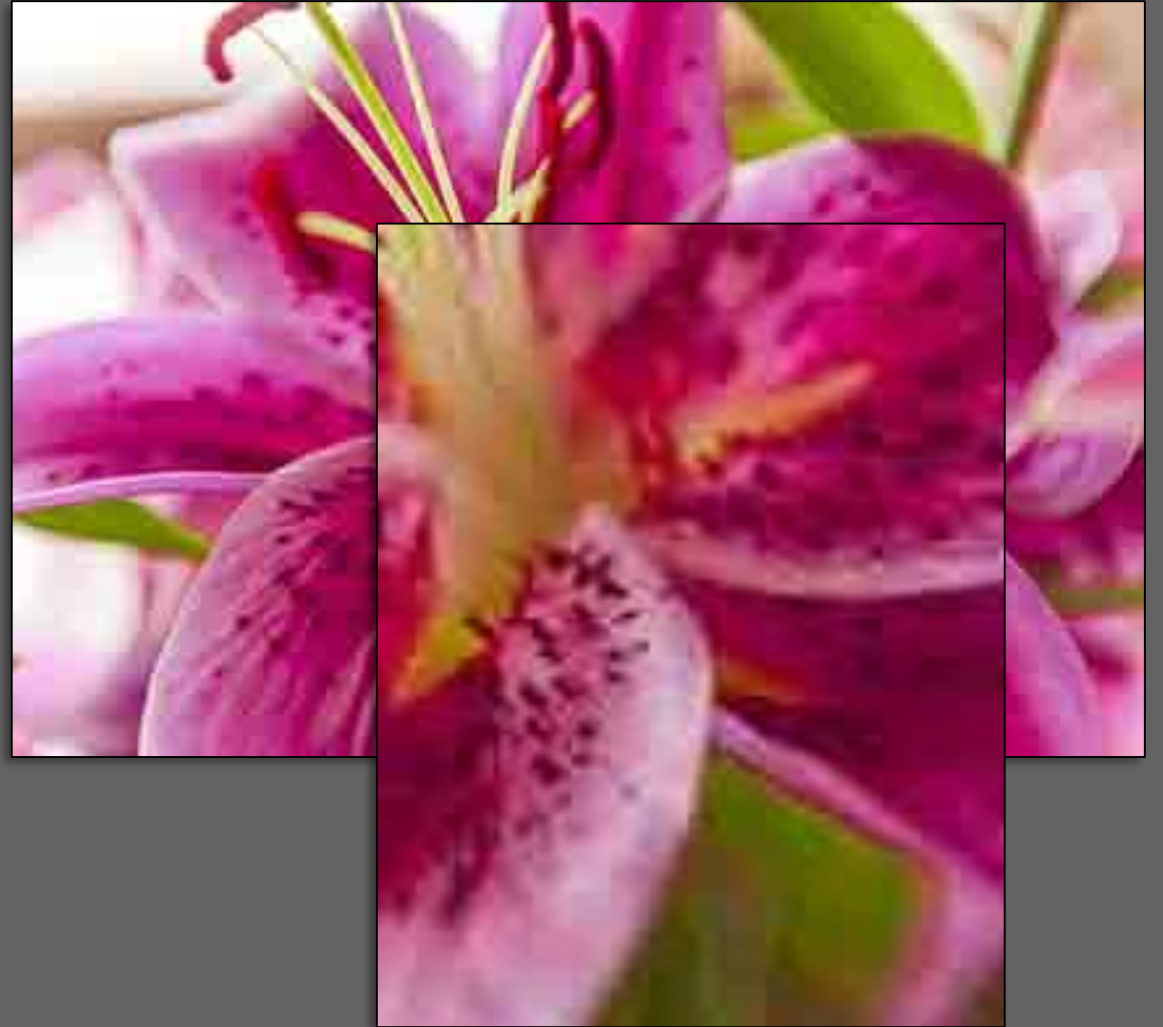
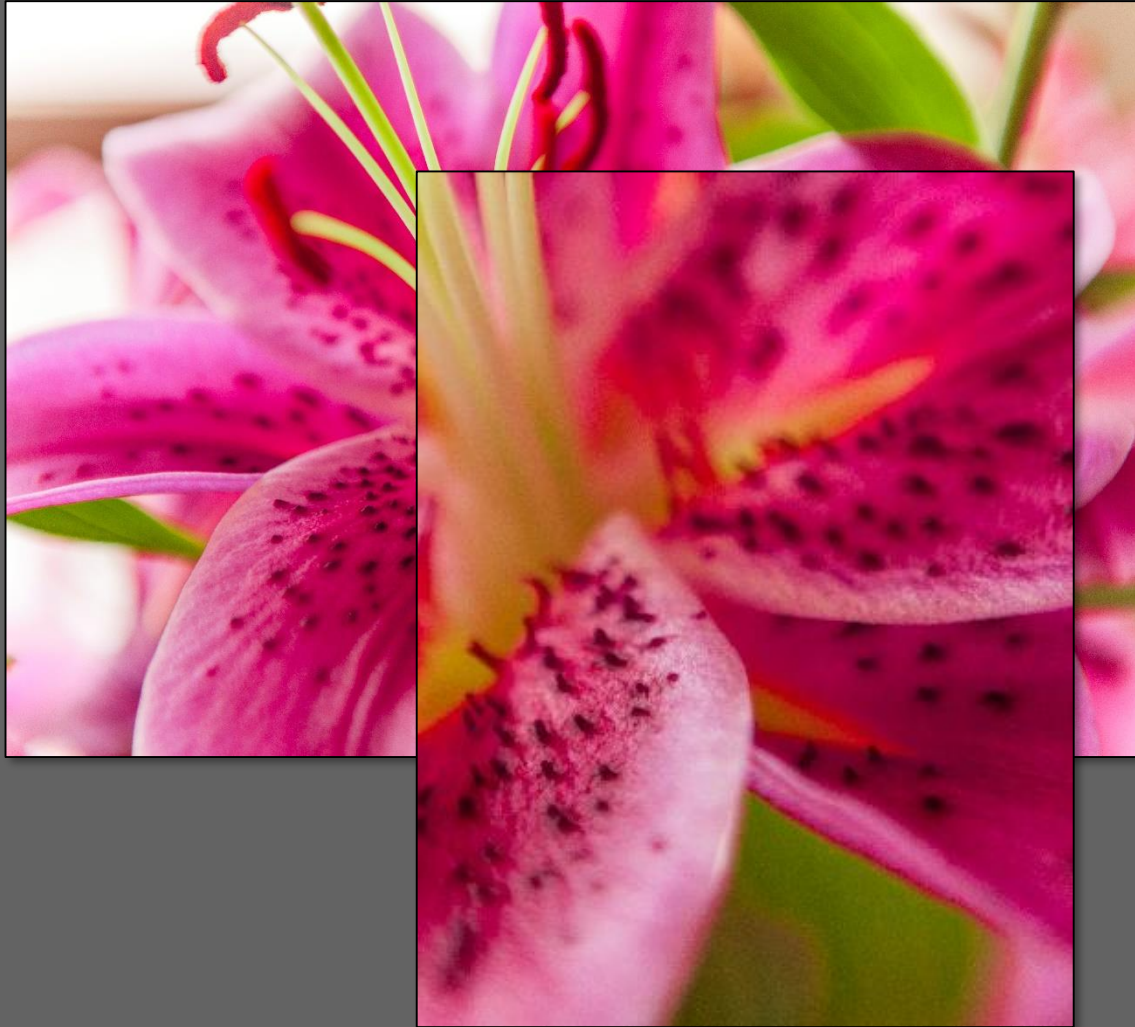
25 FPS

12.5 FPS

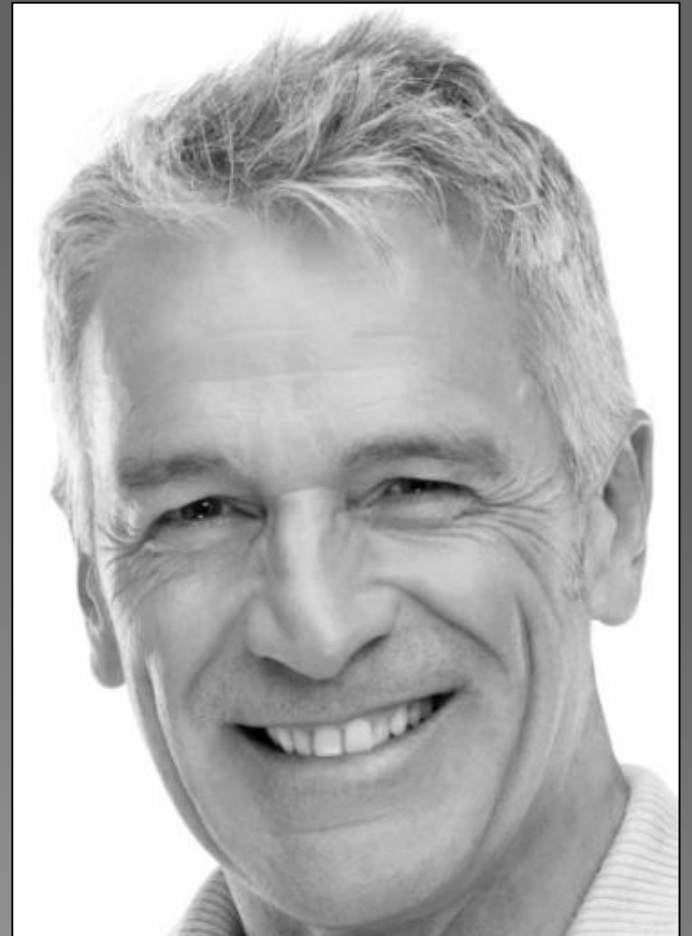
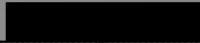
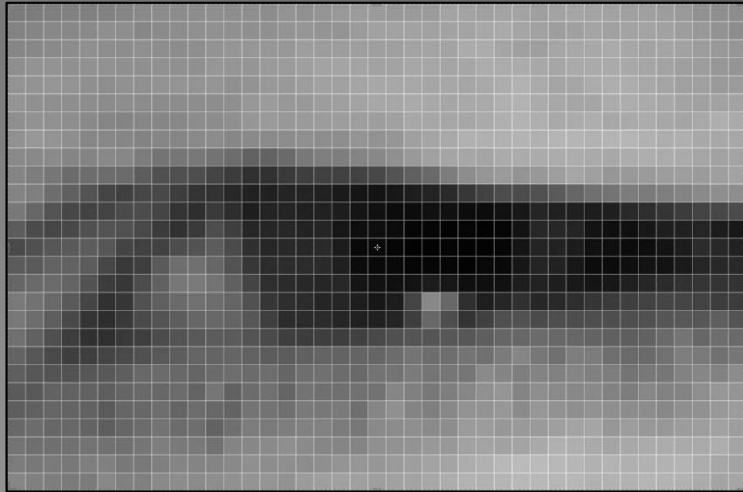
Resolution



# What is Resolution?



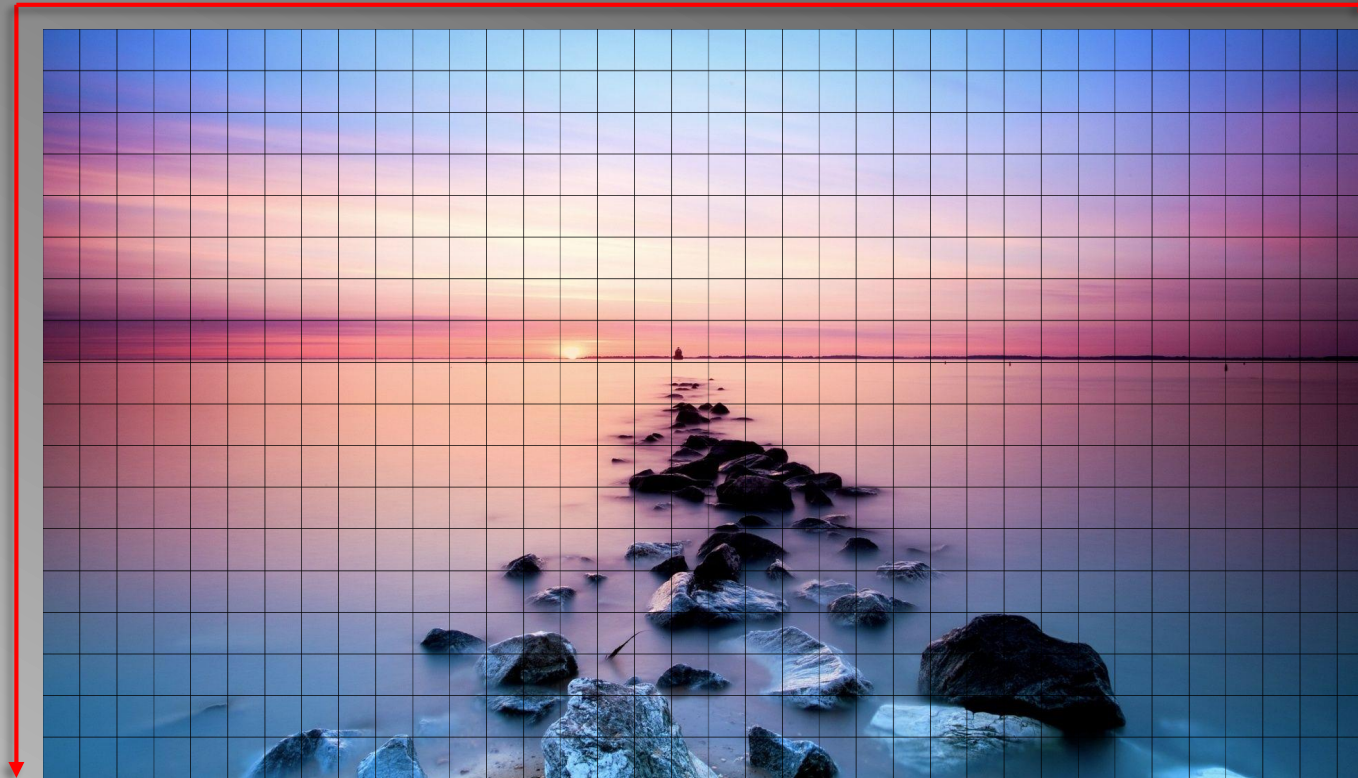
# The pixel



# Video resolution - 720

1280 Pixels

720  
Pixels



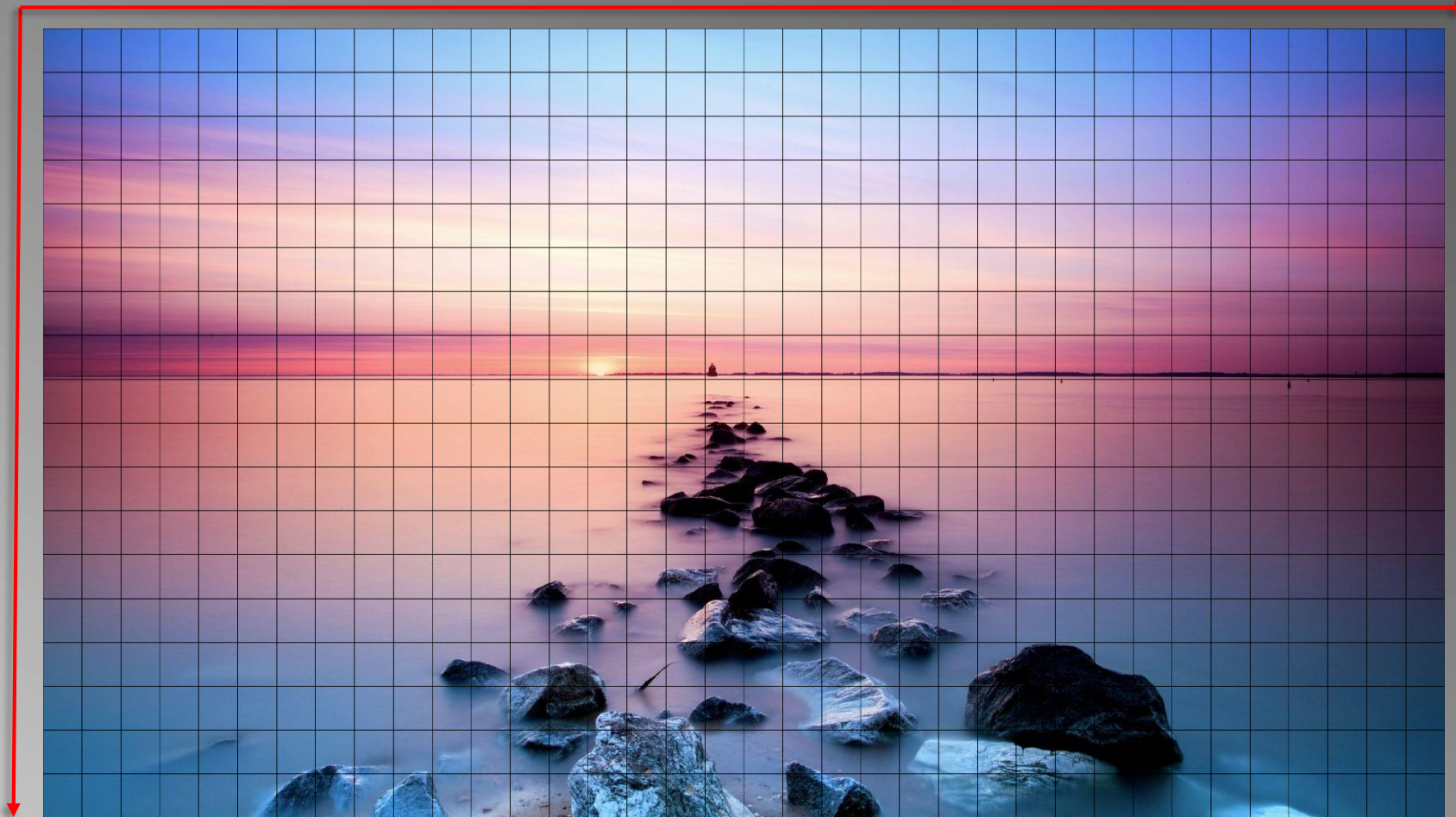
777600  
total pixels

HD 720

# Video resolution - 1080

1920 Pixels

1080  
Pixels



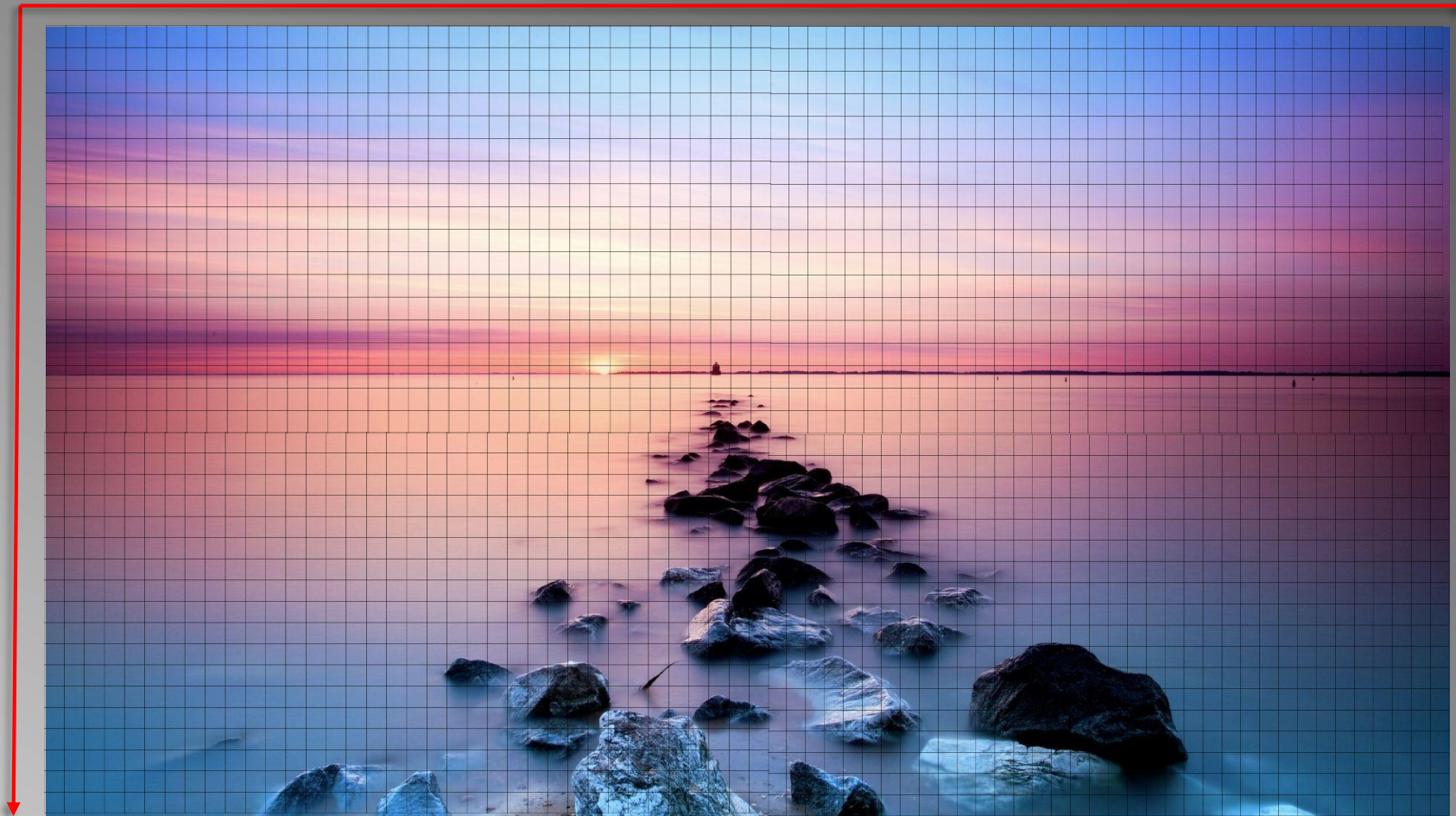
2073600  
Total Pixels

Resolution 1080

# Video resolution – 4K

3840 Pixels

2160 Pixels



8294400  
Total Pixels

Resolution 4K



# What resolution?

Standard  
Definition  
(SD)

720  
(HD)

1080  
(Full HD)

4K



What is Shutter Speed?

# Shutter speeds

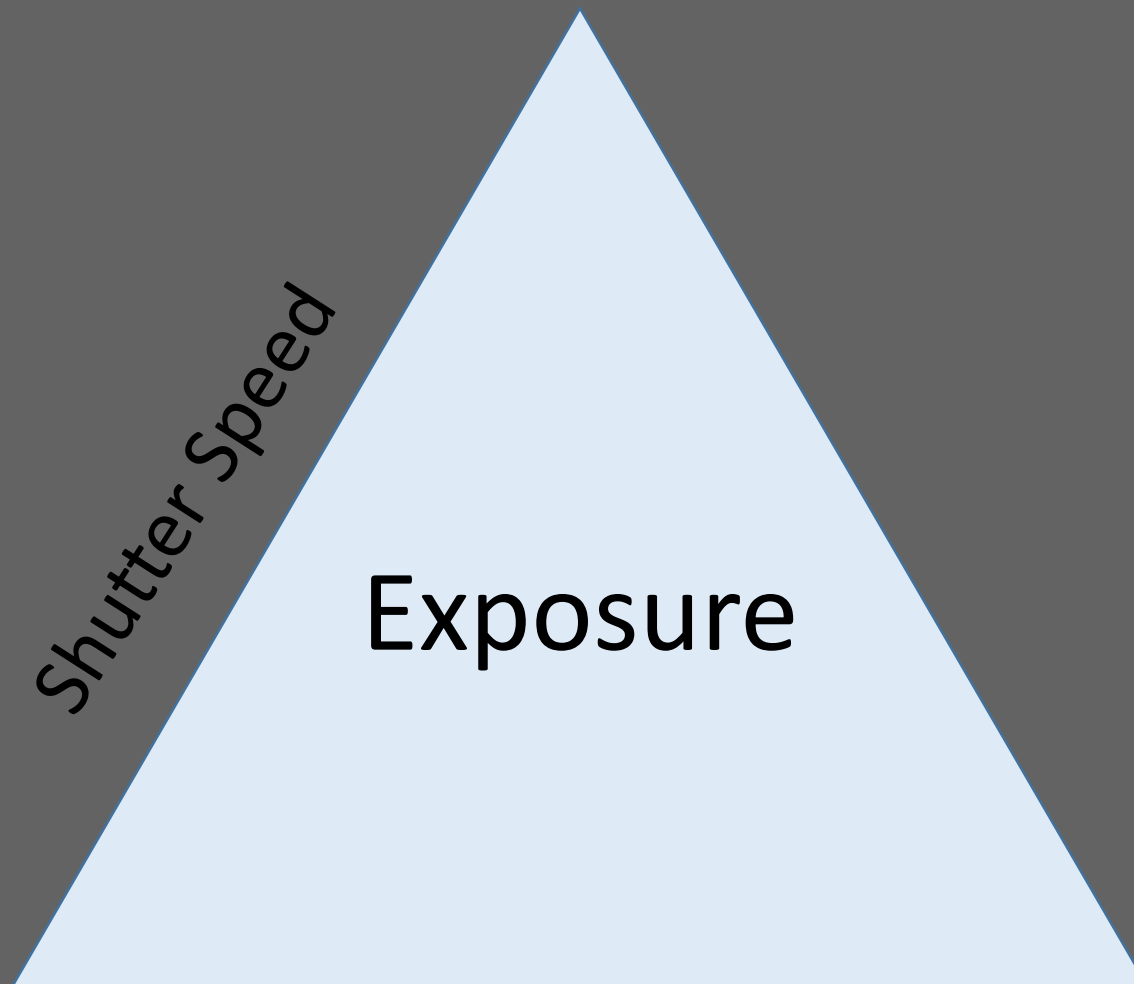


FAST

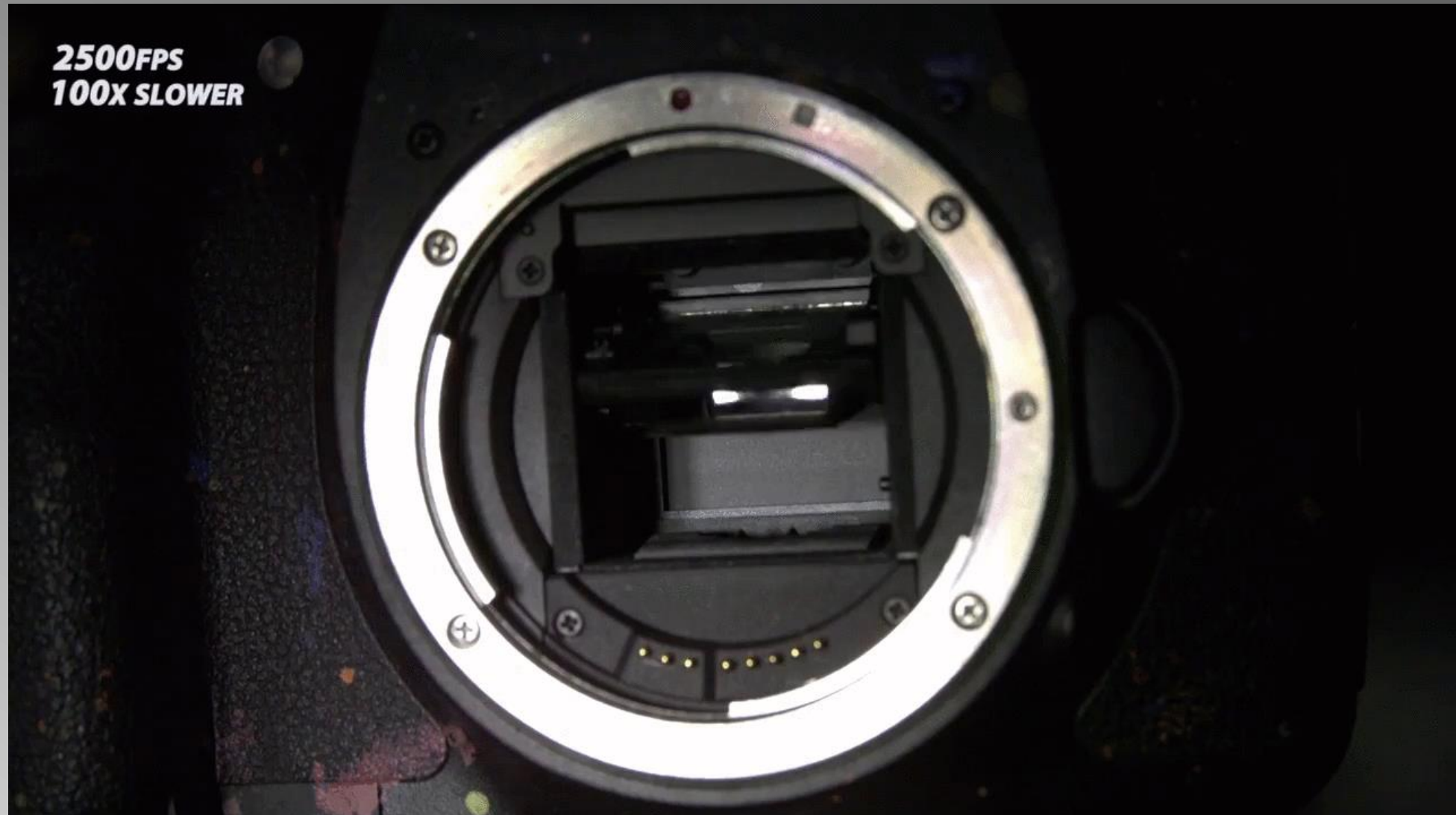


SLOW

# The Exposure Triangle

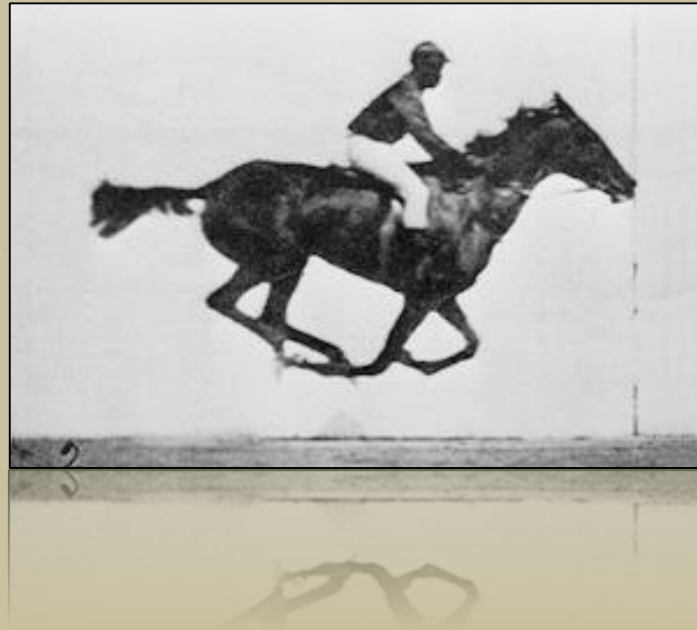


# Shutter Mechanism



# Shutter speeds

**Frames per second  
= how many frames  
are captured in 1  
second**



**Shutter speed = the  
duration of time  
that each frame is  
exposed for**

# Shutter speeds & motion



# Shutter speeds



25 fps

1/50<sup>th</sup>

# Shutter speeds



25 fps

1/30<sup>th</sup>

# Shutter speeds



25 fps

1/125<sup>th</sup>

# Shutter speeds



25 fps –  
1/50th

25 fps –  
1/30th

25 fps –  
1/125th

# What speed should I use?

**Shutter speed should be double your frame rate!**

e.g. 30fps

$(2 \times 30\text{fps}) = 60$

Shutter Speed =  $1/60$

# Shutter speeds

If I shooting at 24 FPS what shutter speed should I use?

$1/48^{\text{th}}$  –  $1/50^{\text{th}}$

If I shoot at 48 fps what shutter speed should I use?

$1/96^{\text{th}}$  –  $1/100^{\text{th}}$

If I shoot at 60 fps what shutter speed should I use?

$1/120^{\text{th}}$  –  $125^{\text{th}}$

# Considerations

- Think about where you are showing you recording – this will influence your frame rate
- High shutter speeds are great for frantic action
- Slow shutter speeds great for dreamy effects
- Recording in 4k has no real benefit (for the time being)
- Do record in Full HD where possible – you can reduce the file if needed



# Summary

- What are Frame Rates?
- What is resolution and what one should I use?
- What is Shutter speed?

# Further Learning

To expand upon the subjects covered in today's lesson:

- Shutter Speeds- lesson 4 Photography

# Lesson Recordings & Assignments

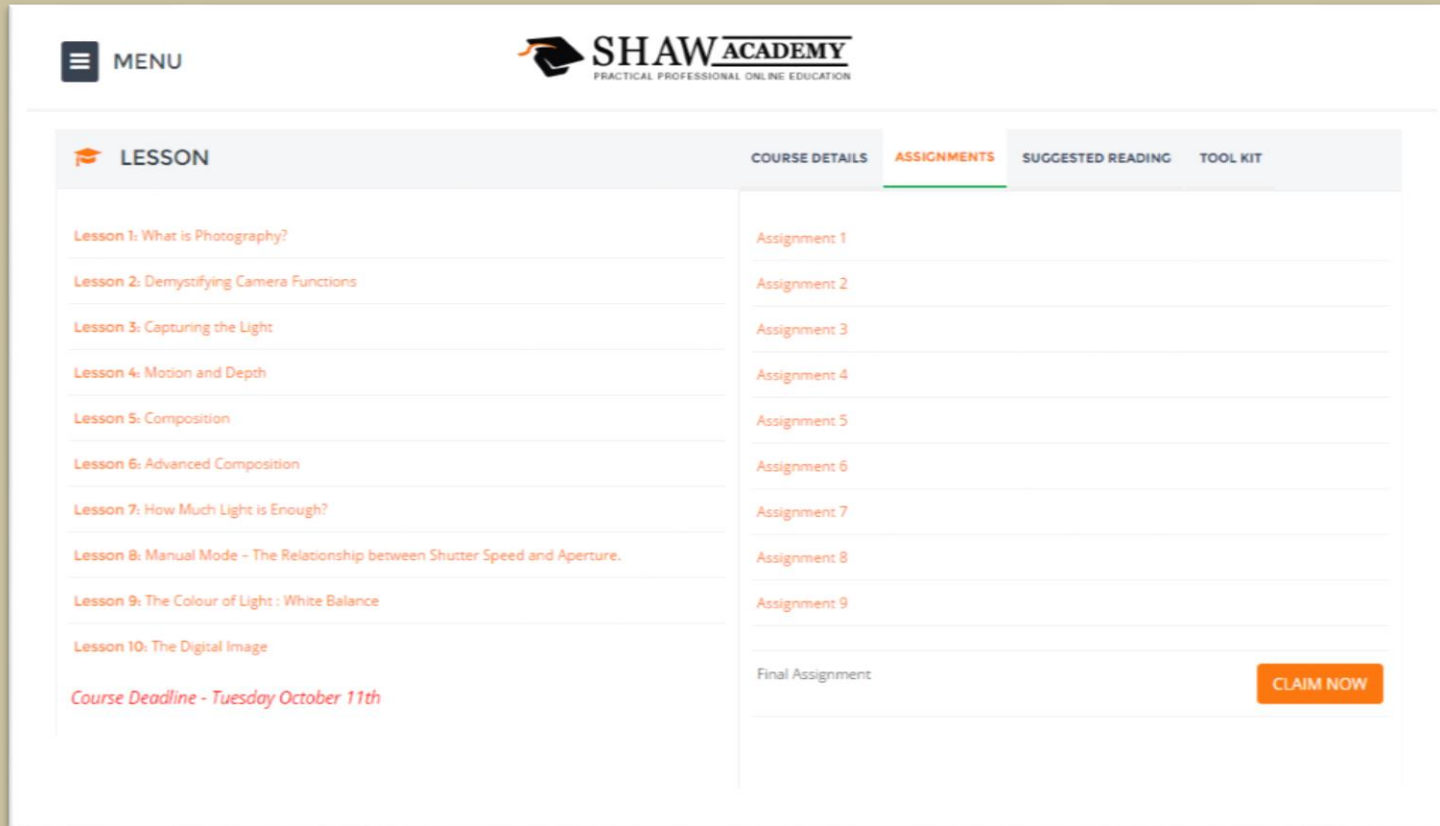


The screenshot shows a video player interface for a lesson recording. At the top left, there is a 'MENU' button with a hamburger icon. In the top center, the 'SHAW ACADEMY' logo is displayed, featuring a graduation cap icon and the text 'SHAW ACADEMY PRACTICAL PROFESSIONAL ONLINE EDUCATION'. Below the logo, the main title 'Diploma In Photography' is centered, with 'What is Photography?' underneath it. The video player itself has a dark background with a camera lens graphic. The text 'Diploma in Photography' is prominently displayed in blue, followed by 'Part I'. Below that, 'Lesson 1' is shown with a camera icon, and 'What is Photography?' is written in blue. At the bottom of the video frame, it says 'Presented by: Thomas Woods Course Educator B.A. (Hons.)'. The video player controls at the bottom include a play button, a progress bar showing '00:10', and an 'HD' indicator.

Log in to your members area:  
[www.shawacademy.com](http://www.shawacademy.com)

Recordings are available within 24 hours

# Lesson Recordings & Assignments



The screenshot displays the Shaw Academy website interface. At the top left is a 'MENU' button with a hamburger icon. The Shaw Academy logo, featuring a graduation cap and the text 'SHAW ACADEMY PRACTICAL PROFESSIONAL ONLINE EDUCATION', is centered at the top. Below the logo is a navigation bar with tabs for 'LESSON', 'COURSE DETAILS', 'ASSIGNMENTS', 'SUGGESTED READING', and 'TOOL KIT'. The 'ASSIGNMENTS' tab is currently selected. The main content area is divided into two columns. The left column lists ten lessons, each with a red graduation cap icon: Lesson 1: What is Photography?, Lesson 2: Demystifying Camera Functions, Lesson 3: Capturing the Light, Lesson 4: Motion and Depth, Lesson 5: Composition, Lesson 6: Advanced Composition, Lesson 7: How Much Light is Enough?, Lesson 8: Manual Mode - The Relationship between Shutter Speed and Aperture., Lesson 9: The Colour of Light : White Balance, and Lesson 10: The Digital Image. Below the lessons is a red text line: 'Course Deadline - Tuesday October 11th'. The right column lists corresponding assignments: Assignment 1 through Assignment 9, and a 'Final Assignment' at the bottom. An orange 'CLAIM NOW' button is positioned to the right of the 'Final Assignment' text.

LESSON	COURSE DETAILS	ASSIGNMENTS	SUGGESTED READING	TOOL KIT
Lesson 1: What is Photography?		Assignment 1		
Lesson 2: Demystifying Camera Functions		Assignment 2		
Lesson 3: Capturing the Light		Assignment 3		
Lesson 4: Motion and Depth		Assignment 4		
Lesson 5: Composition		Assignment 5		
Lesson 6: Advanced Composition		Assignment 6		
Lesson 7: How Much Light is Enough?		Assignment 7		
Lesson 8: Manual Mode - The Relationship between Shutter Speed and Aperture.		Assignment 8		
Lesson 9: The Colour of Light : White Balance		Assignment 9		
Lesson 10: The Digital Image		Final Assignment		
Course Deadline - Tuesday October 11th				<a href="#">CLAIM NOW</a>

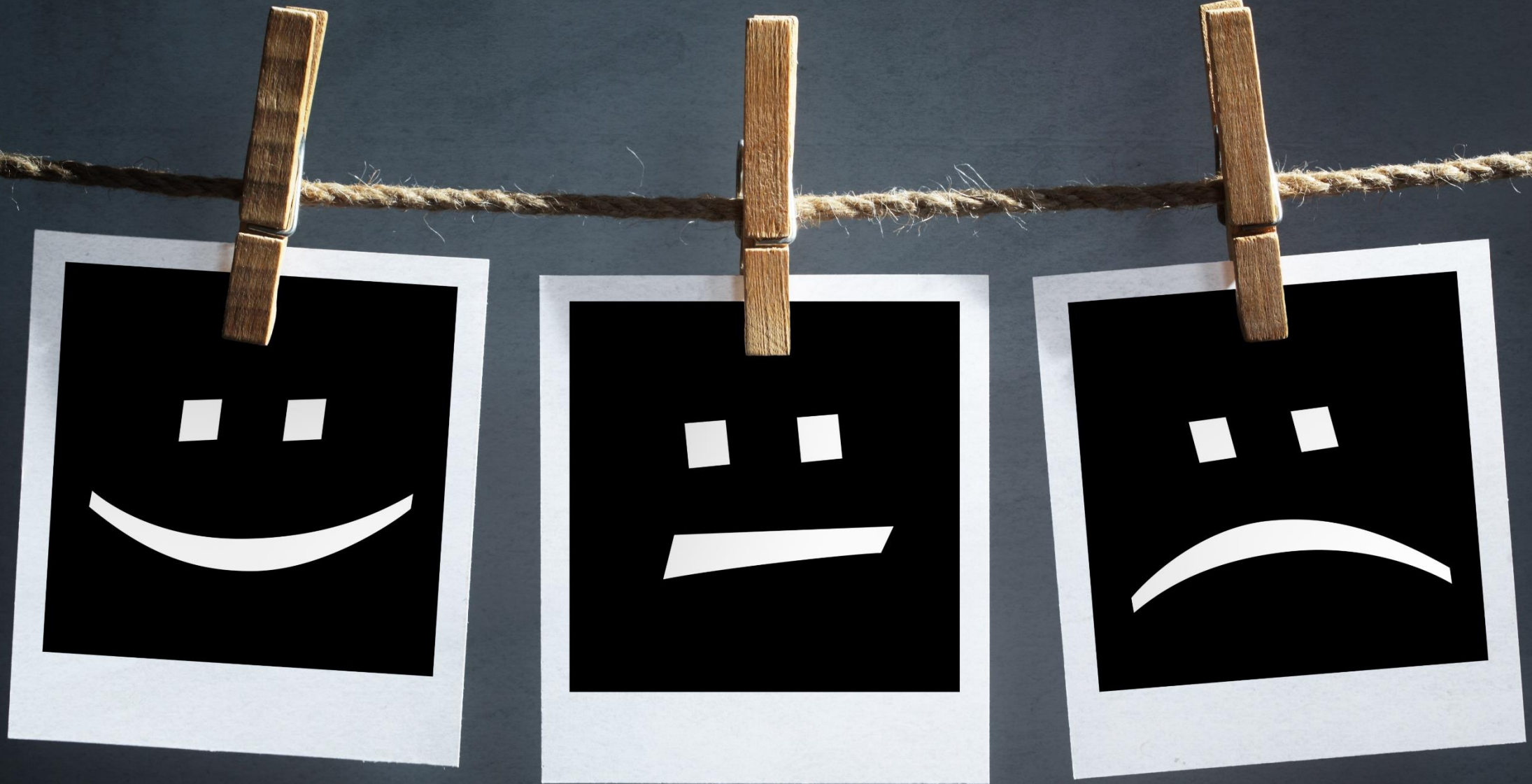
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Assignments are available within 24 hours

## Next Lesson

- The next session is **Apertures and Lenses**
  - Different types of lenses
  - Field of view
  - Depth of Field
  - Focusing

# Rate This Lesson



After the lesson we will ask you to rate the lesson on a scale of 1 (lowest) to 5 (highest).



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# Social Media



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# QUESTION TIME

See you back for Lesson 3  
Aperture & Lenses



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